



**Product Overview** 

# PhotoStress® Analysis

The LF/Z-2 Computerized Reflection
Polariscope System for Full-Field Stress Analysis

**Micro-Measurements** 





## PhotoStress® Analysis

#### LF/Z-2 Reflection Polariscope System

## What is PhotoStress® Analysis?

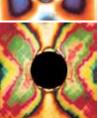
- A full-field stress and strain analysis method
- Can be utilized under various live load conditions
- Suitable for residual stress analysis, assembly stress inspection, and fatigue tests
- Can be applied to various materials (metals, composites, concrete, and more)
- Easy to use and analyze results











Aluminum (top), composite material (bottom)



Low load (top), high load (bottom)

#### About PhotoStress

- The PhotoStress® analysis system is composed of a reflection polariscope and PSCalc® computer software that enables the user to store and process LF/Z-2 readings of stress and strain
- A variety of photoelastic coatings may be applied on a wide range of materials, with simple or complex shapes



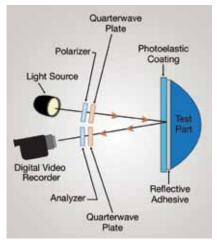
LF/Z-2 Reflection Polariscope—tripodmounted or handheld



PSCalc® Software



PhotoStress coating applied to a structure of complex shape



Schematic representation of a reflection polariscope

SPECIFICATIONS	
Range	From 0% to 150% elongation (by various coating types)
Resolution	≈10 µs (for 3-mm coating thickness)
Measuring Area	Subject to coated area
Working Distance	Up to 3.05 m (10 ft)*
Light Source	White light
Operating System	Windows 2000, XP, Vista, Windows 7
Size and Weight	Maximum height: 1950 mm (76.4"); Assembled weight: 2.9 kg (6.3 lb)
Camera Resolution	Function of camera type used
Other Components	PSCalc computer software, laser-based direction indicator, USB compensator interface, application kit, portable operation handgrip, technical/operating manuals and tech notes

#### PhotoStress® Analysis





## PhotoStress® Analysis System – Main Benefits and Solutions

- Instant identification of stress concentrations and zero-stressed areas
- Quantitative measurement of stress and strain at any point on the structure
- Validation of any finite element analysis (FEA)
- Weight reduction optimization
- Analysis of:
  - Stress resulting from fabrication tolerances
  - Stresses which occur during assembly processes
  - Residual stresses due to processes such as welding and casting
  - Simple or complex stress situations



www.vishaypg.com/micro-measurements/photo-stress-plus/



PhotoStress®





**FEA** 



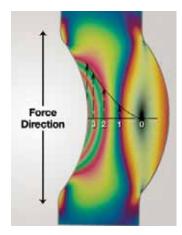
PhotoStress stress patterns of an aircraft fuel door panel under load



PhotoStress analysis of a landing gear



Human bones-PhotoStress stress distribution analysis



Stress distribution in a C-shaped beam

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